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THE SCIENCE OF HISTORY

BY PROFESSOR CLARENCE WALWORTH ALVORD

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## THE SCIENCE OF HISTORY

BY PROFESSOR CLARENCE WALWORTH ALVORD

THE UNIVERSITY OF ILLINOIS

NAPOLEON'S cynical question, "What is history but a fiction agreed upon," suggests a criticism that nervous historians have always felt the need of answering; and much investigation and many speculations have been directed at the adverse critics in the hope of placing the popular science in that favored class where are found such unassailable sciences as chemistry and physics. The discussion of the proposition, "Is history a science?" depends so completely on the definition of the term "science" that one is tempted to take refuge with Mr. Freeman behind the old English equivalent, "knowledge." The failure to recognize the difference between the phenomena of history and those which interest the natural scientists and the disinclination to accept limitations not common to all sciences have always been the stumbling blocks for those theorists who would lead history along the path of objective certainty. History has its limitations and to ignore them is not the way to create a science; but rather we must state exactly what can and can not be known, so that we may escape the will-o'-the-wisp kind of sport, a pastime much favored by the speculative historian. It is, therefore, necessary to recognize the peculiarities of the phenomena, of the problem presented by them, and of the method which can be employed.

For the purposes of this paper the phenomena of history, the activities of feeling, thinking, willing men associated in some kind of a community for mutual protection and benefit, need not be dwelt upon, nor is a discussion of the well-known complexity of such phenomena demanded. Their most conspicuous characteristic is that they all belong to the past. Whereas in other sciences the facts are open immediately to experiment or observation, the events of history are studied mediately through the reports of them, except in so far as actual remains have sporadically reached us. With a liberal interpretation, Mr. Froude is right in saying:

Historical facts are of two kinds, the veritable outward fact—whatever it was which took place in the order of things—and the account of it, which has been brought down to us by more or less competent persons. The first we must set aside altogether. The eternal register of human action is not open to inspection.

Yet the lack of faith in his witnesses, which is the conspicuous characteristic of the modern historian, is the safeguard against deception. We have passed far beyond the naïve credulity of the medieval

annalist and demand of every historical source proof of the truth within it. We must know which of our sources we can trust and how far we can admit them as witnesses of the fact and what was the fact.

Every period of the past offers difficulties and obscurities peculiar to itself. The sources are either too meager for the precise determination of the event, or as in the modern epoch, so multitudinous that the historian is bewildered by the reports of special commissions and the published and unpublished documents, so that he can only hew a pathway through the wilderness. Further the very personality of the writers makes his task more difficult. If they are ignorant, can he trust them? Are they prejudiced, will he not be deceived? Are they learned, can he give due allowance to the ideas and ideals, social, political and religious, with which they weight their narrative? Thus at the very beginning of the science, in seeking to get at the phenomena, there is endless research to obtain information more or less questionable. For this purpose there has been elaborated a method which is scientific both in spirit and in the results obtained. Yet at this point, however cautious the examination of the sources, there enters an element of doubt into our knowledge of what occurred in the past. On such foundations historians should not seek to build too imposing an edifice. A careful study of the means of construction should be made in order to raise a superstructure whose form and weight have been carefully adjusted to the weakness of the substructure.

The historical problem must, therefore, be stated with a full consciousness of the peculiarities of the phenomena. Now a scientist may attempt to analyze his phenomena and disclose their constituents; he may seek to discover the essential laws of their being; or he may simply trace their growth. This last is unquestionably the point of view of historians. As Dr. Bernheim says:

History is the science of the evolution of man in his activities as a social being.

The idea of evolution is peculiarly an historical one; that events are not isolated, but fit together as cause and effect of an ever-changing whole, is the assumption which underlies all historical knowledge, without which no progress can be made; every movement of the world's history conditions the next, although the finite mind is unable to follow the line of connection at all times. The fact that history traces an evolution separates its problem definitely from that of sociology, with which there is such danger of confusion, for the phenomena of the two sciences are almost the same. Sociology is the science of social statics, history of the social dynamics; the one studies the average of masses, the other individual facts or events; sociology would explain the mechanics of society, history the development; the former seeks to discover the general laws underlying the particular phenomena, while the latter is contented to trace the life history of the particular event. It



is that in which history is interested, the individual fact with all the differences, marking it as something unique in the past. Sociology studies the same phenomena, but draws from present and past in her search for conditions of like kind, disregarding individual variations, and therefore hopes—so far without much success—to find types and even discover laws. What sociology with its different point of view and method may hope to accomplish is not a part of the historical problem.

The demand has been made of the science, however, that it disclose the laws of social dynamics. The futility of such an attempt will be more fully seen after the discussion of the method of reasoning in history; but at the present moment it is sufficient to note that to discover a law by observation—the only method capable of being employed by the historian—there is need of finding a type or typical development, the law of which will be the law of all similar phenomena. It is not to be denied that there have been in the past certain recurrences of similar forms which some philosophers have eagerly asserted to be typical regularities of social development from which laws may be learned. On account of the complexity of the phenomena, in which these similar elements are closely interwoven with variants, and because the observations at best are unreliable and can never be corrected by repeated trial, a complete knowledge of the conditions or of the occurrence is not possessed by the historian and there is, therefore, no secure basis for an induction. Besides the collection of a number of similar facts from various periods is not the usual method of the historian in whose eyes events are individual in character, never combining the same conditions, never following the same course. These very differences are those which he seeks. Even here he must acknowledge himself baffled in his search for the sufficient cause of these variations which mark them unique. He finds their beginnings and traces their development, but, as far as his knowledge goes, it is conceivable that quite another succession of events might have been enacted, and then he would have zealously shown how it too fitted into the evolution past and present and interdigitated so accurately with the other phenomena. From the observation of an isolated event, dissimilar to all others, no law can be formulated.

From another point of view attempts have been made to discover the laws controlling historical development. The world's history is continuous; each nation, each period forms but a part of the grand whole; on this broader field can we find laws of historical evolution. We historians stand in a very different relation to our phenomena than does the natural scientist; in the twisting and squirmings of the microcosm we read our own destiny. Never can we get outside of the course of the evolution of which we are ourselves a part, and view it as something entirely foreign to our wills. An objective criterion of the truth, although not wholly lacking, is still by no means so perfect as that offered the natural scientists. But a still greater difficulty confronts

us; there is no whole and completed development in the world's history; the beginning and the end are unknown; the origin is shrouded in darkness; before the future there hangs the veil of Mayo; we can observe the pupa or cocoon, but not the caterpillar and moth. Under such conditions every explanation must be subjective in character.

Leaving then to one side the search for laws of social dynamics, the historian contents himself with disclosing the causal relations of the successive movements in the evolution of human society, and this is the sole aim of history; but even here the science is subject to important limitations for the use of experiment is impossible, so that the method must be that of observation. At best many disadvantages confront the observer, which are not encountered by the experimenter, so that his results form a very insecure basis for induction, unless, as in other sciences, his observations can be often repeated and the human senses aided by sensitive instruments. But repetition and the use of instruments are not for the historian, who works over the observations of the untrained minds of the past. In seeking the cause or causes of any phenomenon the natural scientist views it as a type of a large class; and even in the case where causation is determined by a single experiment, there always exist numerous phenomena of the same kind or else the particular phenomenon offers itself to the possible repetition of the observation, so that the assurance of the opportunity of repeating the test case plays an important part in the induction. The scientist abstracts from the occurrence all individual variations and finds the cause of the typical phenomenon, which is generalized in thought so as to cover all individuals of like kind. Thus are obtained causal relations, which have objective truth. Such a method of abstraction is inapplicable in history, for, as we have already seen, from the point of view of the historian each phenomenon is exceptional and can not be classified to find types, and also the same conditions and events never recur.

In the search for causal relations how far is it possible to make use of the canons of inductive logic? On account of the reasons stated above it is impossible to find two events which agree or disagree in all respects except one. Therefore the canons of agreement and difference are of no assistance in historical research. The impracticability of these canons in history has always been acknowledged, and yet the literature of history as well as of sociology and economics is filled with errors arising from their unscientific use.

Of the inductive canons there remain those of residue and of concomitant variations, neither of which is a very safe criterion of causal relations and both of which can to a limited extent be employed by the historian. When there are general propositions proved by other sciences, such as psychology, sociology and economics, which will establish the needed partial causation, the canon of residue can be used. The value of such reasoning will depend on the reliability of the general

propositions and on the historical possibility of their being true when applied to the conditions of a society of the past. Again the certainty of the result will depend on the assurance that the historian has discovered all the conditions, and this will always remain an open question. The reverse process, so popular with sociologists and psychologists, is also of some service. By the collection of the data of individual acts and striking an average, the personal volitional element can be approximately eliminated, and the residue over and above the probable conduct reveals a partial cause of the activities of the masses. Besides the meager data which the past affords and the impossibility of sending elaborate questionnaires to past generations, both of which facts hinder the use of this method, the results reached by such means show only the general tendency, the probable action, and not the particular acts and motives which form such a prominent feature of history.

The true method of history would seem to be the canon of concomitant variations; but unfortunately there is no invariable measure, as in the physical sciences, by which variations can be mathematically determined. All elements of social life vary continually. If we select one as a measure for all, we may be using that which is most variable and certainly one of the causes of variations in other elements of society. In fact a social yard-stick is wanting. In the study of primitive society this canon has been employed successfully because of the large number of similar phenomena, both past and present, but it fails to satisfy the needs of the historian of a civilized people.

By this hasty review of the canons of inductive reasoning, it is seen that only two, and these the least desirable, can be employed by the historian, and then with very material limitations. History is not a science of pure induction and never can be. The facts of history could never be joined into causal relations by induction alone. If there were no other means, history would remain chronology.

How then can causal relations be established by the historian? The answer is: "By deductive and teleological reasoning, for the most part by the latter."

The past illustrates the operation of the laws which have been established by the social sciences. The method of deduction can be employed in cases where individual volition can be eliminated, where causes psychological or economic affect large masses of individuals, bringing about important historical changes. In tracing economic development and social psychic life this method establishes causes which satisfy the mind and a large mass of historical knowledge is thus removed from the charge of uncertainty.

As a rule, however, the historian's view of the past is teleological. We are obliged to pass from effect to cause just as we do when reviewing our own lives. Knowing the end reached by human society at any period, we trace back the events which have been the means of bringing



about this existing state. Every event is a means to an end; it is purposive. Either some seemingly unimportant event has widened into numerous ends or the many events have united to produce a given end. According to this point of view, the historian eliminates factors which seemingly have no purposive relation to the result. These effects are employed to explain causes rather than that causes are shown blindly to produce effects. As Mr. Freeman constantly insisted:

You can not understand the present without a knowledge of the past, nor can you understand the past without a knowledge of the present.

The present is the purposed end and is to be explained by the means which brought it into being. The past is the means and can only be understood in the light of the end which it is to bring about. In the natural sciences there is no such view of phenomena as this predominating. Chemical affinities are not regarded as means to bring about ends, but as forces which produce effects blindly and necessarily and will do so on all occasions; there is nothing arbitrary about the individual result; but in history we are dealing with human society, where movement is caused by volition, by "individual will acts." As far as man can perceive, history is made, not entirely, of course, but very materially by purposive ideas and not wholly by the blind action of chemical-physical forces.

Instinctively one asks whether this teleological view corresponds with the actual state of society, and the answer must be negative. Studying society carefully before any great historical movement, it would seem that out of it any number of events might emerge. There are possibilities of many great movements from the conditions present; and, after we know the outcome, we have a case of double sixes appearing when the dice are thrown. We may argue from the double sixes back to the cause, if we will; but from the causes ascertained by us, double twos might have resulted as well. The solution of a problem in probabilities is the final result of any science which studies human dynamics.

We have hit upon the weakness in any argument to prove history a science comparable to the natural sciences. The scientist believes in the universal reign of causality and fixes as the goal of his search the establishment of causal relations between his phenomena which have truth in reality, that is, objective truth. The belief in the persistency of such causal relations assures him that there lurks no subjective element in his result. Now the phenomena of developing society are of such a nature that any association of causal relation between them will generally contain an element of uncertainty, because there is lacking an objective criterion; and hence the mind hesitates to assume that a knowledge of the complete cause is ascertained or that the effect must have followed the causes which can be determined. That all which happens in society is the result of effective causes can not be denied by



one believing in the uniformity of nature, but it is denied that the mind is able to peer through the darkness of the past and see the hidden workings of forces in the soul of humanity.

Historians have been loath to acknowledge frankly this limitation, and instead have promulgated various theories to account for human phenomena without even a tacit assumption of ignorance. They would prove that history has been caused by universal forces, cognizable by man, and that man is an automaton, tossed hither and thither as the forces of the cosmos have acted upon him. To this end social evolution has often been likened to the life of a living organism and the resemblances are sufficiently remarkable. It is influenced by its environment; it has its separate parts with their functions; blood vessels and nerves are not lacking; and the cells are the individuals of which society is composed. The simile is a very happy one, but it remains a simile.

Misled by the resemblances, historians have often sought to carry over into their field of inquiry the methods of the biologists, hoping thus to silence forever the denunciations of inexactness and to establish causation in their science in the same way as it is done by the investigations of the life of the lower animals and plants. According to this theory, the cosmic causes of the varying phenomena among people are to be sought in their physical environment. In the ultimate analysis, natural variations must be derived from the same source, for "we can not regard any nation as an active agent in differentiating itself. Only the surrounding circumstances can have any effect in such a direction." Yet as far as the historian is concerned these national varieties are the most important facts in his knowledge and the ultimate explanation of many events in the world's history. As Mr. Symonds says,

Nothing is known for certain about the emergence from primitive barbarism of the great races, or about the determination of national characteristics. Analogues may be adduced from the material world; but the mysteries of organized vitality remain impenetrable. What made the Jew a Jew, the Greek a Greek, is as unexplained as what daily causes the germs of an oak and of an ash to produce different trees.

History has to accept this dissimilarity of peoples with all its results, for an unproved hypothesis should not form the foundation of its method.

Closely connected with the above is the still unsolved problem of heredity. Is not heredity one of the great causes of variation among men and hence an important factor in the production of historical movement? This question, to which I shall return later, must be answered in the affirmative by the historian, to whom the differences between individuals and between nations are conspicuous characteristics of his phenomena, and as far as his information reaches are due to the accidents of birth as well as to environment.

Furthermore, the biological historian slights the great internal fact which separates the social organism from all others and makes it a unicum, to the study of which the biological laws are not applicable, namely, the social psychic life which is such a large factor in the evolution of man. It is a characteristic of highly organized society to wean itself from that dependence on the physical environment which is such an important element in the lives of animals and savages. Therefore a community of human beings can not be treated as an unconscious organism, wholly conditioned by its material surroundings which create blind forces determining its development. Organic needs do not make psychic factors subservient to them, rather the opposite is the case. Mind exercises a control over the material needs and directs the exertions of society. The vague use of the terms of biological science, natural and sexual selection, when employed in speaking of the social evolution, seem more metaphorical than real; for on this higher plane of life the two laws play but a very subordinate part, both being subservient to intelligent choice without the necessary result of the elimination of the weak and "unfitted." The mental life of man, which takes the forms of religion, science, art, and mechanical inventions, creates an environment of a wholly unbiological character and becomes by accumulation a tradition, a psychic environment, or rather it is the soul of the organism; for the individual men, the cells of the organism, change but little from generation to generation and do not alter their physiological character, nor do they, as ages pass, acquire any great increase of power, mental or spiritual. The evolution, in fact, during the historical period is transferred from the individuals of society to the social psychic environment of the community, which undergoes changes from age to age, as the activities of men of successive generations add their portion to history. Thus no physical and physiological analysis of this peculiar organism can satisfy the requirements of our science. After the study of the economic struggles and the institutions of any period, which also have a psychic side, there remains for the historian the tracing of the mental and spiritual life in its various and complicated forms.

Certain theorists claim that we have in this psychic environment a means of determining the sufficient causes of historical events. The physical and psychical environment together reveal the sufficient reason for the acts of any generation. There can be no question of arbitrary self-determination: for, born into certain conditions, man acts as the forces physical and spiritual compel him. Given the territory, the national characteristics, the institutions, the social psychic environment and we have history a connected whole with cause and effect verified as in the natural sciences. The activities of individuals in relation to these great forces are like the waves on the surface of the deep

ocean. A man may raise himself above the level a moment but sinks back, having affected the whole so little that the historian can eliminate the free-will acts of individuals and treat only the life history of generic man. "The new direction of historical investigation," says Professor Lamprecht, the leader of this movement, "has first brought pure causality into history, because it seeks to prove the causal coherence of the generic life of man, and does not confine itself to the deeds of eminent men." It is not to be denied that such an historical hypothesis has value, but it is one-sided and, as far as our knowledge goes, is but half a truth.

It has been already shown that from the nature of the subject matter, history is concerned with the particular rather than the general. It is the personal act amidst the almost never changing activities of the masses that interests us. This personal act, however, is an unknown quantity in every generation. The generic man is but an average of the community, within which there are numerous variations, just as is found by the naturalist among the individuals of any species of animals. These variations are not due wholly to the physical and psychical environment, but come partly from the accidents of birth, which the historian can not trace to their first cause. The forces which are to produce historical movements are not existent except in the souls of these individuals of which the average of any given community would take no account. The social psychic environment will affect and develop these variants in different ways, and the sum total of these variations will give rise to historical phenomena which would not be perceived in the external causes acting on the community.

After the fact we can know the effect, but why there was that particular effect instead of many possible others escapes our search. Within the zone where past tradition meets present variations, we can not follow the intricate working of forces. In the last analysis, therefore, an important cause of historical phenomena lies in the soul of the individual and must be sought in his variations from the multitude, a mystery locked in the secret chambers of the germ cell, in his relation to the past, which constantly changes with the person, in his motives of action, which can not be massed with those of his fellows. Infinite knowledge may follow amidst the complex mingling of will and will, desire and desire, of the millions of individuals the line of cause and effect, but man with human intelligence stands in the presence of any generation as before the entrance of a dark cavern into whose innermost recesses his eyes can not penetrate.

The higher the civilization the greater these variations from the average. Savages are much more similar psychically than the more civilized, just as plants conform to the type closer in the natural state

than in the cultivated. It is this close approximation to a type that gives the biologist encouragement in his investigation of the life of the lower organisms. As soon as he is compelled to acknowledge the entrance into his problem of individual volition, his hope of discovering laws or causal relations similar to those found by the chemist or physicist is limited just as is the case of the historian. In civilized nations the variations among men are multitudinous. Amidst such great dissimilarities can we talk of a generic man? Is every one compounded of two parts, a personal and generic?

There are times when the contrary theory seems justifiable, when one is willing to declare with Emerson:

Every true man is a cause, a country, an age: requires infinite space and number and time fully to accomplish his thought—and posterity seems to follow his steps as a procession. A man Cæsar is born and for ages after we have a Roman Empire. Christ is born and millions of minds so grow and cleave to his genius, that he is confounded with the possible of man. An institution is the lengthened shadow of one man, as the Reformation of Luther—Methodism of Wesley. All history resolves itself very easily into the biography of a few stout and earnest persons.

To outward seeming eminent men are the result of fortuitous variation and are similar to the "sports" of the biologist, since the connection between them and their origin remains even more obscure than slighter variations; and these "sports" of history are unquestionably the direct cause of changes in the community. Their peculiarities are preserved, permeate the whole mass of individuals and become in time part of the social tradition. The simile of the deep ocean of social psychic life and the waves of individual activities does not present the correct picture, for the waves subside and leave the depth of the ocean the same, while the influence of the individual does not disappear but lives on after his death, increasing the extent and variety of that environment out of which he came.

The limitations of the science of history are very real. The phenomena are hidden in the past from personal observation, are the most complex of all sciences, are unique in character and apparently the result of the will acts of individual men, whose motives are derived from mingled hereditary and environmental influences. At times the historian can by induction or deduction discover a sufficient cause of the phenomena, but more frequently he is obliged to acknowledge the impossibility of unravelling the tangled thread of causal relations amidst the purposive and arbitrary acts of millions of individuals. As historians must seek for the social forces in the souls of the individuals composing society, historical cause will always remain in the circle of probability and thus differ from the causes established by scientists in the physical and biological world.















